Pedelec Impulse Evo Speed

Original User Guide | EN

Version 2

17/11/2016

impulse evo speed

Notes

TABLE OF CONTENTS

I. Introduction

This user guide will help you to enjoy all the benefits of your S-Pedelec (Pedelec Speed) Impulse Evo and to use it correctly.

WARNING

Prior to initial use, carefully read the "Original User Guide | Pedelec Impulse Evo" and the "Original User Guide | General" (CD). Also follow the instructions from component suppliers. Familiarise yourself with the meaning and depiction of safety information in the user guide. Ensure to contact your cycle dealer in the event clarification is required. Failure to comply with safety symbols and instructions can cause electric shock, fire, serious injury and/or damage to the cycle. The manufacturer's liability and warranty are deemed null and void for damage and injury caused by a failure to adhere to safety symbols and instructions.

Keep the user guides for informational and reference purposes in the future. The guides must be passed on to all those using, looking after and repairing this S-Pedelec.

I.I CD

The accompanying CD contains the "Original User Guide | Pedelec Impulse Evo" in different languages. Also on the CD is the "Original User Guide | General", containing general information on cycles. Download the latest version of the user guide next time you are on the Internet. The CD can be played on any standard PC or laptop. Proceed as follows:

METHOD A

1. Insert the CD
2. Left-click twice the shelexec.exe file
3. Select the required language
4. Select "Open User Guide from CD" or "Check Online for New Version of User Guide"

METHOD B

1. Insert the CD
2. Right-click once "Open Folder to Show Files"
3. Left-click twice "Start"
4. Select the required language
5. Select "Open User Guide from CD" or "Check Online for New Version of User Guide"

The Adobe Reader application is required to read the user guide. It is on the CD and can also be downloaded free from www.adobe.com.

The print version of the "Original User Guide | General" can be ordered at no charge from:

Derby Cycle GmbH
Siemensstraße 1-3
49661 Cloppenburg, Germany
info@derby-cycle.com

I.II Service book

In the accompanying service book are the warranty regulations, a cycle passport, and forms to use for initial sale, maintenance and owner changes.

Keep the service book up-to-date accurately and adhere to the maintenance intervals. This will prolong the service life of your Impulse Evo and keep it safe.

I.III Declarations of conformity

Please take note of the accompanying declarations of conformity and keep them in a safe place.

We confirm with the declarations of conformity that all safety requirements in the directives applicable to the S-Pedelec and charger are satisfied.

I.IV Explanation of safety symbols

DANGER

This symbol in conjunction with the "Danger" word denotes a potentially dangerous situation. Failure to comply with this safety symbol may result in very serious injury or death.

WARNING

This symbol in conjunction with the "Warning" word denotes a potentially dangerous situation. Failure to comply with this safety symbol may result in serious injury.

CAUTION

This symbol ⚠ in conjunction with the "Caution" word denotes a potentially dangerous situation. Failure to comply with this safety symbol may result in minor or slight injury.

PLEASE NOTE

This symbol ⚠ in conjunction with "Please note" denotes a potentially dangerous situation. Failure to comply with this safety symbol may result in damage to the S-Pedelec and its components.

This symbol denotes user tips and particularly useful or important information on the product or its additional benefit. It is not an indication of a dangerous or harmful situation.

II. General safety information

WARNING

Rim brakes: When cycling for long periods downhill, try to avoid continual, uninterrupted braking if possible. It may result in a reduction of braking effect or damage to the tyres. It is better to brake every now and then with "cooling times" in-between, allowing the head wind to cool the braking system. If absolutely necessary, take breaks to let the braking system cool down.

Regularly check wearing parts such as brakes, brake pads and tyres. Damaged parts can cause accidents and falls. The addition power means higher loads are applied to wearing parts on a S-Pedelec than on a normal cycle. Replace brake pads when their wear limit is reached. This is evident from the mark on a brake pad and when you can pull the brake lever all the way back to the handle bars.

Do not touch the motor after a long downhill ride - it can become very hot. Touching it can cause burns.

Also follow the safety instructions at the start of the next section.

CAUTION

Only use the cycle for its intended purpose - otherwise there is a risk of technical failure ⇨ *IV. Intended use Page EN-9*.

Observe the overall weight of the S-Pedelec - exceeding it can result in the breaking or failing of safety parts ⇨ *4.5.1.2 Riding with a trailer and/or luggage Page EN-41*.

Before setting off on a ride, always check all quick-release clamps are seated tightly and correctly.

Disc brakes: The brake disc and the quick clamping lever for a wheel must be on opposite sides. If they are on the same side, there is a risk they may collide.

PLEASE NOTE

Have assembly and adjustment work carried out by a specialist cycle dealer. If you need to tighten something yourself, refer to the comprehensive list of torques which must be observed - in the "Original User Guide I General" (CD).

If you carry out technical modifications to your S-Pedelec, bear in mind national traffic regulations and applicable standards. Remember also that the warranty may become void as a result.

PLEASE NOTE

If components are modified or replaced, the same requirements apply as for other motor vehicles. You must only use replacement parts that are certified as approved for your S-Pedelec. Alternatively, you can have components approved individually by the technical inspection authority (TÜV).

The following lists show which components of your fast S-Pedelec can be replaced and what rules apply: ⇨ *8. Replacing parts on the S-Pedelec Page EN-63*.

III. Legal regulations

III.I General

DANGER

Never ride "hands free". You must always have at least one hand on the handle bars. If you do not, you are liable to prosecution (and are also endangering your health).

Never perform any alterations to the drive unit (with which the cut-off speed is increased at speeds faster than 45 km/h). S-Pedelecs whose motor rating and/or ride characteristics have been modified may no longer satisfy the legal regulations of the country of use. You may be making yourself liable to prosecution when riding on public roads with a "tuned" S-Pedelec. This also presents a risk of technical failure. A cycle modified this way is excluded from guarantee and warranty cover.

S-Pedelecs must, as all cycles, satisfy the requirements laid down in the respective national road traffic acts.

III.II Legal regulations in Germany

Other regulations may be in place in other countries. Find out about applicable local legislation before using your S-Pedelec abroad.

Some of the regulations in place in Germany at the time this user guide was written:

» From a legal standpoint, the S-Pedelec is a Class L1e moped. It must, as with other powered two-wheelers and motorised vehicles, satisfy the requirements laid down in the Road Traffic Licensing Regulations.

» The S-Pedelec may not travel at over 20 km/h with motor assistance only. You will therefore reach 15 to 18 km/h on the flat.

» Motor assistance cuts out when you reach about 45 km/h. You cannot reach this speed, for which you require about 700 Watt, with just the assist power from the electric motor. You reach speed of 35-45 km/h with the combination of the 350 Watt motor output and your own physical strength.

IMPORTANT FOR THE RIDER

» Riders must wear a helmet. Please wear an appropriate helmet (such as a cycle helmet)

» A driving license is mandatory Proof of having passed a moped test is required. If you have a German driving license, this is already included. If you were born before 01/04/1965, you may also ride the S-Pedelec without a driving license.

» Riders must have insurance. The small vehicle mark is available from all insurance companies.

» Cycle paths can be used with restrictions. You may ride on all cycle paths without restrictions if you use your S-Pedelec as a bicycle, i.e. with no assistance from the electric motor. A change to the road traffic regulations stipulates the following apply when a motor is used: As is also the case with mopeds, you must use cycle paths when using your fast S-Pedelec outside built-up areas. An additional sign on the cycle path, "No mopeds", shows when this is not permitted by way of exception (as stipulated in § 2, Section 4 of the road traffic regulations (StVO)). Within built-up areas on the other hand, you may only use cycle paths when there is an additional sign on the cycle path (as laid down in § 41, Section 2, No. 5).

» Children may not be transported in trailers pulled by S-Pedelecs. Normal cycle trailers can be attached however, provided the tow attachment used has the general operating permit necessary for motorised vehicles.

» The transport of children in child´s seats is for S-Pedelecs not allowed.

DANGER

Before using a trailer, read Section ⇨ *4.5.1.2 Riding with a trailer and/or luggage Page EN-41*.

IV. Intended use

IV.I S-Pedelec

Its design and equipment mean the cycle is intended for use on public roads and paved pathways. It can also be used on easy terrain. The manufacturer and dealer accept no liability for damage resulting from use extending beyond this definition and/or failure to comply with the safety instructions in the user guide. This applies in particular for using the cycle off-road, when it is overloaded and when faults are not rectified properly. Also included in the definition of intended use are conformance to the operating, maintenance and repair conditions in the user guide and service book - stipulated by the manufacturer. Fluctuations in consumption and battery power, and a reduction in capacity due to the cycle's age, are commonplace and technically unavoidable - and as such do not represent material defects.

IV.II E-Mountainbike

Its design and equipment mean this cycle is not intended for use on public roads. The equipment stipulated must be fitted to the cycle before it may be used on public roads. This cycle is intended to be used off-road (but not for competition use). The manufacturer and dealer accept no liability for damage resulting from any use extending beyond this definition and/or failure to comply with the safety instructions in the user guide. This applies in particular when the cycle is used in competitions, when it is overloaded and when faults are not rectified properly. Also included in the definition of intended use are conformance to the operating, maintenance and repair conditions in the user guide and service book - stipulated by the manufacturer. Fluctuations in consumption and battery power, and a reduction in capacity due to the cycle's age, are commonplace and technically unavoidable - and as such do not represent material defects.

1. The S-Pedelec Impulse Evo Speed and its components

1	Back light	23	Motor
2	Luggage rack	24	Pedal
3	Saddle	25	Crank
4	Seat post	26	Inner bearing
4a	Mirror	27	Chain rings
5	Crossbar	28	Derailleur
6	Handle bars	29	Belt / chain
7	Bell	30	Rear stand
8	Front stem	31	Chain stay
9	Easy-reach control	32	Gears
10	Front light	33	Sprocket assembly
11	Headset	34	Back brake
12	Headtube	35	Seat stay
13	Shock absorber	36	License plate holder
14	Display	37	Seat tube
15	Mudguard	38	Down tube
16	Fork	39	Frame lock
17	Battery Include and docking station	40	Chargers
18	Front brake		
19	Hub		
20	Spokes		
21	Wheel rim		
22	Tyre		

2. Quick-start guide

2.1 Charging the battery

You need not charge the battery if just taking a short test ride. You should charge it before your first longer cycle ride however, ⇨ *6.3.1 Charging a battery Page EN-56*, because the battery is only partially charged (transportation regulations dictate that batteries are supplied partially charged - by approx. 50%).

Perform a learn cycle. You should drain a new, fully charged battery once until the assist function stops, and without recharging it in-between. By doing so, the battery "learns" its capacity, and the actual capacity matches the charge level display. Please perform a learn cycle every six months or 5,000 kilometres. If you do not repeat the cycle from time to time, the difference between actual battery capacity and charge level display will become greater and greater.

2.2 Inserting and locking into place a battery

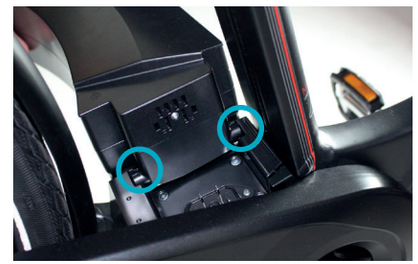
PLEASE NOTE

Hold the battery tight so it does not fall. It might be damaged otherwise.

One-key system: The same key can be used for cycle and battery lock.

1. Hold the battery at angle of 80°, slightly tilted to the left in front of the docking station.

2. Place the battery catches into the dents provided.



3. Push the battery forwards and upwards into the docking station until the locking mechanism engages.

4. Remove the battery key from the lock. Now the battery is locked.

The recommendation is to remove the key now and keep it in a safe place so it does not break off and is not lost.

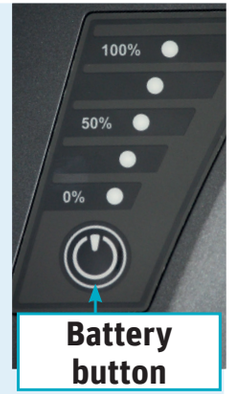
Make a note of the key number on the sales receipt/ document. This number can be used to order a replacement key ⇨ *7.2 Battery Page EN-60*.

2.3 Switching on the S-Pedelec

1. Press for 1 second the ⏻ button on the easy-reach control. The display lighting is switched on for about 30 seconds. The back light is also turned on. The front light is turned on when it has been switched on from the top of the lamp. After a short time, a welcome screen is shown, followed by the start menu. If you have an Impulse Evo System with back pedal, "Please pedal" is shown. You can configure other settings from the start menu.

Press the ⏻ button

If the cycle does not start up despite you pressing the ⏻ button, press the battery button for 1 second. Then briefly press the ⏻ button on the easy-reach control. The S-Pedelec switches on. If it still does not switch on, check the battery ⇨ *5.2.1 Battery management system (BMS) Page EN-47*.



2.4 Changing assist mode

1. You must be in the start menu to change assist mode. Briefly press the ⊕/⊖ buttons to select the assist level.

DISPLAY	ASSIST	POWER CONSUMPTION
ULTRA	the assist function works extremely hard	very high
POWER	The assist function works very hard	High
SPORT	The assist function works medium hard	Medium
ECO	The assist function works with low power	Low
OFF	No assist	Very low

2. Assistance is provided as soon as you start pedalling. Assistance is deactivated as soon as you stop pedalling or you reach a speed of 45 km/h.

Underneath the assist level selected is a display area showing the current assist level from the drive unit in the form of ten bars having increasing heights. The more bars are dark, the higher the assist level being provided. This display is only shown when an assist mode is selected.

The drive unit is not assisting

The drive unit is providing medium assist

The drive unit is providing maximum assist

2.5 Enabling push assist

WARNING

Push assist may only be used when the S-Pedelec is being pushed. It is not intended to be used when a rider is sitting on the cycle. There is a risk of injury when the wheels are not in contact with the ground. Push assist works up to a speed of 20 km/h.

It provides assistance when the cycle is being pushed. This is particularly helpful for steep hills you are unable to climb with pedalling.

1. Keep the ⊕ button pressed. Push assist is activated after 3 seconds. A warning is sounded at the same time. "**Hint (1/1) Pushing assistance**" is shown on the display. Keep the button pressed until you no longer need push assist.

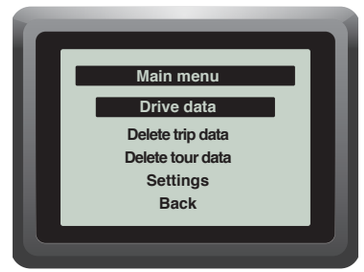
Push assist activated

2.6 Configuring settings in the menu

2.6.1 Go to the main menu

1. When you are in the start menu, press the SET button for 3 seconds. You access the main menu.

Start menu



Main menu

2.6.2 Navigating within a menu

1. Navigate to the required place using the ⊕/⊖ buttons. The option selected is shown with a black background.
2. Confirm your selection by briefly pressing the SET button. You access the next-lowest menu level.

2.6.3 Returning from the menu

There are three ways to return from a menu to the next-highest menu level or start menu:

a) Back option

1. Navigate to the Back option using the ⊕/⊖ buttons. It has a black background when selected.
2. Confirm with the SET button. You access the next-highest level.

b) Brief pressing of the SET button

1. If there is no Back option, and one of the options displayed is selected, briefly press the SET button to return to the next-highest level

b) Prolonged pressing of the SET button

1. Pressing the SET button for about 3 seconds returns you to the start menu

2.7 Changing ride profile

1. Press for 3 seconds the SET button in the start menu. You access the main menu.
2. Select main menu option "Settings" using the ⊕/⊖ buttons. The option selected is shown with a black background.
3. Confirm by briefly pressing the SET button. You access the menu options.
4. Select "Device settings" using the ⊕/⊖ buttons
5. Confirm with SET
6. Select "Drive" using the ⊕/⊖ buttons. The option selected is shown with a black background.
7. Confirm with the SET button. You access the menu sub-items.
8. Select "Biking profile" using the ⊕/⊖ buttons. The option selected is shown with a black background.
9. Confirm with the SET button. You access the ride profiles.

Ride profile	Properties			
	Power on start-up	Power delivery	Maximum power	Power consumption
Relax	Low	Low	Low	Low
Regular	Medium	Medium	Medium	Medium
Dynamic	High	High	High	High

10. Select the required option using the ⊕/⊖ buttons. It has a black background.
11. Briefly press the SET button to return to the menu sub-items

2.8 Switching off the S-Pedelec

From the easy-reach control:

1. Press for 1 second the ⏻ button on the easy-reach control. The goodbye screen is displayed and the Impulse Evo System is switched off.

From the battery:

1. Press the battery button twice

2.9 Unlocking and removing the battery

1. Hold the battery, put the key into the battery lock and turn it clockwise. Hold the key. The battery is unlocked.

2. Grip the battery and rotate it out of the docking station.

PLEASE NOTE

Hold the battery tight so it does not fall. It might be damaged otherwise.

The recommendation is to remove the key now and keep it in a safe place so it does not break off and is not lost.

3. Drive unit, display and easy-reach control

3.1 Safety information

WARNING

Do not open the drive unit. This presents a risk of electric shock. The warranty also becomes null and void. Only have repairs to the drive unit carried out by trained cycle dealers.

Always remove the battery before working on the S-Pedelec. The cycle could switch on without warning, seriously injuring you.

Do not allow yourself to be distracted by the display. Only configure menu settings when the S-Pedelec is stationary. If you do not fully concentrate on traffic, you risk being involved in an accident or falling off.

PLEASE NOTE

All components mounted on the drive unit, and all other drive components, may only be replaced with identical components or those approved specially for your S-Pedelec by the manufacturer. Overloading and damage may result otherwise.

Do not open the display. It can be damaged beyond repair.

PLEASE NOTE

Do not tug at the display cables or display-cable plugs. If you do so, you may break the plug-retaining lugs. If you want to detach the display – e.g. because it is no longer functioning – the best thing is to contact your dealer. You can also detach the cables yourself. To do this, you will need a small screwdriver. Proceed as follows:

1. Lift the display up carefully.
2. Press the head of the screwdriver lightly against the display cable plug, while sliding the retaining lug back. The display cable will detach.

3.2 Technical details

Drive unit

Type	Brushless electric motor with gear unit	
	Back pedal	Free-wheel
Nominal power	350 W	350 W
max. torque	80 Nm	80 Nm
Nominal voltage	36 V	36 V
Cut-out speed	45 km/h	45 km/h
Permitted ambient temperature range during operation	-10 to +40 °C	-10 to +40 °C
Storage temperature	-10 to +50 °C	-10 to +50 °C
Recommended storage temperature	18 to 23 °C	18 to 23 °C
Protection class	IP 54	IP 54
Weight	4 kg	4 kg

Impulse Evo display

Type	LCD with easy-reach control
Permitted ambient temperature range during operation	-10 to +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Dimensions L | W | H | D	9.4 cm | 7.6 cm | 2 cm | 12 cm
Protection class	IP 54
Weight	127 g
Languages	DE | EN | NL | FR | ES | IT | FI | DA

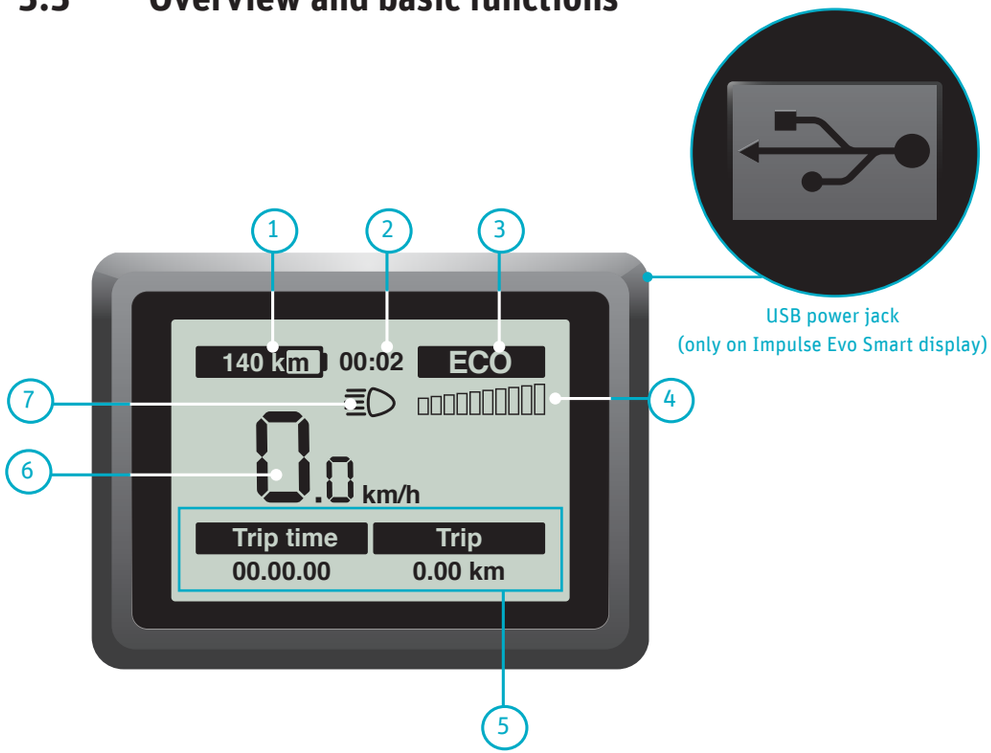
Impulse Evo Smart display

Type	LCD with USB charge socket, Bluetooth and easy-reach control
Permitted ambient temperature range during operation	-10 to +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Dimensions L | W | H | D	9.4 cm | 7.6 cm | 2 cm | 12 cm
Protection class	IP 54
Weight	127 g
Languages	DE | EN | NL | FR | ES | IT | FI | DA

Easy-reach control

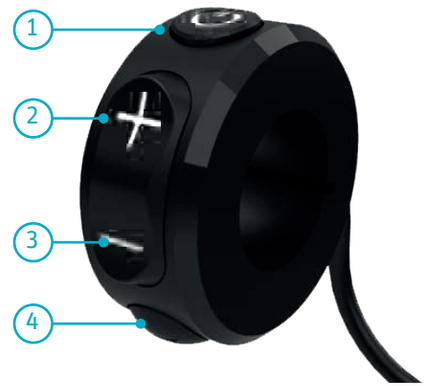
Type	Easy-reach control with 4 buttons
Permitted ambient temperature range during operation	-10 to +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Protection class	IP 54
Weight	27 g

3.3 Overview and basic functions



Impulse Evo Smart display / Impulse Evo display

NO.	FUNCTION
1	Battery charge level + remaining range
2	Time ⇨ *3.4.2.9 Time Page EN-29*
3	Assist mode ⇨ *3.3.4 Changing assist mode Page EN-20*
4	Assist display ⇨ *3.3.4 Changing assist mode Page EN-20*
5	SET favourites ⇨ *3.3.6 SET favourites Page EN-21*
6	Speed
7	Light



Easy-reach control

NO.	SYMBOL	FUNCTION
1	⏻	ON/OFF ⇨ *3.3.1 Switching on the S-Pedelec Page EN-19* ⇨ *3.3.2 Switching off the S-Pedelec Page EN-19*
2	⊕	a) Increase value / scroll up b) Push assist ⇨ *3.3.5 Using push assist Page EN-2120* c) Enable display light for 30 seconds
3	⊖	a) Reduce value / scroll down b) Enable display light for 30 seconds
4	SET	a) Configure/confirm b)In the main menu, switch between the SET favourites ⇨ *3.3.6.1 Display of SET favourites in the start menu Page EN-21*. c) Enable display light for 30 seconds

3.3.1 Switching on the S-Pedelec

The system can only be activated when a sufficiently charged battery is used.

1. Press for 1 second the ⏻ button on the easy-reach control. The display lighting is switched on for about 30 seconds. The back light is also turned on. The front light is turned on when it has been switched on from the top of the lamp. After a short time, a welcome screen is shown, followed by the start menu. If you have an Impulse Evo System with back pedal, "Please pedal" is shown. You can configure other settings from here.

If the cycle does not start up despite you pressing the ⏻ button, press the battery button for 1 second. Then briefly press the ⏻ button on the easy-reach control. If it still does not switch on, check the battery ⇨ *5.2.1 Battery management system (BMS) Page EN-47*.

The back light has a sidelight function. It cannot be turned off.

3.3.2 Switching off the S-Pedelec

From the easy-reach control:

1. Press for 1 second the ⏻ button on the easy-access control. The goodbye screen is displayed and the Impulse Evo System is switched off.

From the battery:

1. Press the battery button twice

You can switch off the S-Pedelec anywhere within the menus. The start menu does not need to be displayed for this.

The most recent setting changes remain saved.

If the drive unit is not required to deliver power for 20 minutes or so (because the S-Pedelec is stationary for example), the Impulse Evo switches off by itself.

3.3.3 Battery charge level and remaining range

The battery charge level and range are shown in the top left of the display. A battery-shaped icon shows the remaining range, telling you how long the Impulse Evo system can continue to assist you. The lower the battery charge level, the shorter the black part in the battery. The range also shows a lower value.

High battery charge level and long remaining range

Low battery charge level and short remaining range

The value displayed can change quickly when the circumstances change, such as when riding up an incline after a long, flat stretch.

3.3.4 Changing assist mode

1. You must be in the start menu to change assist mode. Briefly press the ⊕/⊖ buttons to select the assist level.

DISPLAY	ASSIST	POWER CONSUMPTION
ULTRA	the assist function works extremely hard	very high
POWER	The assist function works very hard	High
SPORT	The assist function works medium hard	Medium
ECO	The assist function works with low power	Low
OFF	No assist	Very low

Underneath the assist level selected is a display area showing the current assist level from the drive unit in the form of ten bars having increasing heights.
The more bars are dark, the higher the assist level being provided. This display is only shown when an assist mode is selected.

The drive unit is not assisting

The drive unit is providing medium assist

The drive unit is providing maximum assist

3.3.5 Using push assist

It provides assistance when the cycle is being pushed.

WARNING

Push assist may only be used when the S-Pedelec is being pushed. It is not intended to be used when a rider is sitting on the cycle. There is a risk of injury when the wheels are not in contact with the ground. Push assist works up to a speed of 20 km/h.

It provides assistance when the cycle is being pushed. This is particularly helpful for steep hills you are unable to climb with pedalling.

1. Keep the ⊕ button pressed. Push assist is activated after 3 seconds. A warning is sounded at the same time. "**Hint (1/1) Pushing assistance**" is shown on the display. Keep the button pressed until you no longer need push assist.

Push assist activated

3.3.6 SET favourites

3.3.6.1 Display of SET favourites in the start menu

Proceed as follows to display another SET favourite in the start menu:

1. Briefly press the SET button in the start menu. If you have selected more than one SET favourite in the main menu ⇨ *3.3.6.2 Preselecting SET favourites Page EN-21*, the next SET favourite is shown.
2. Keep pressing the SET button until the required SET favourite is displayed

3.3.6.2 Preselecting SET favourites

You can choose which SET favourites can be shown in the start menu.

» Trip km/time
» Trip max/Ø
» Tour km/Ø
» Cadence

You can select all SET favourites or just one. Proceed as follows for this:

1. Press for 3 seconds the SET button in the start menu. You access the main menu.
2. Select main menu option "Settings" using the ⊕/⊖ buttons. The option selected is shown with a black background.
3. Confirm by briefly pressing the SET button. You access the menu options.
4. Select "Personalise" using the ⊕/⊖ buttons. The option selected is shown with a black background.
5. Confirm with the SET button. You access the menu sub-items.

6. Select "SET favourites" using the ⊕/⊖ buttons. The option selected is shown with a black background.
7. Confirm with the SET button. You access the SET favourites.
8. Select the required option using the ⊕/⊖ buttons. It has a black background.
9. Briefly press the SET button to set or remove the option in the box
10. Once you have made the selection required, you can return to the menu sub-items with "Back"

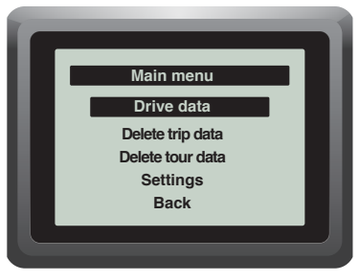
3.4 Menu

3.4.1 Configuring settings in the menu

3.4.1.1 Go to the main menu

1. When you are in the start menu, press the SET button for 3 seconds. You access the main menu.

Start menu



Main menu

3.4.1.2 Navigating within a menu

1. Navigate to the required place using the ⊕/⊖ buttons.
   The option selected is shown with a black background.
2. Confirm your selection by briefly pressing the SET button.
   You access the next-lowest menu level.

3.4.1.3 Returning to the next-highest menu level

There are two ways to return from a menu to the next-highest menu level:

a) Back option

1. Navigate to the Back option using the ⊕/⊖ buttons. It has a black background when selected.
2. Confirm with the SET button. You return to the next-highest level.

b) Brief pressing of the SET button

1. If there is no Back option, and one of the options displayed is selected, briefly press the SET button to return to the next-highest level

3.4.1.4 Returning to the start menu

1. Pressing the SET button for 3 seconds returns you to the start menu

3.4.2 Menu structure

Main menu options	Menu options			
"Show ride data" ⇨ *3.4.2.1 Show ride data Page EN-26*	Trip (in km)			
	Trip time (in 00:00:00 format)			
	Trip max (in km/h)			
	Trip Ø (in km/h)			
	Tour (in km)			
	Tour Ø (in km/h)			
	Total (in km)			
"Delete trip data" ⇨ *3.4.2.2 Deleting trip data Page EN-26*	Confirm delete?	No		
		Yes		
"Delete tour data" ⇨ *3.4.2.3 Deleting tour data Page EN-27*	Confirm delete?	No		
		Yes		
	Menu options	**Menu sub-items**	**Sub-items**	
Settings	Device settings	Display	Contrast ⇨ *3.4.2.4 Contrast Page EN-27*	-5 to +5
			Brightness ⇨ *3.4.2.5 Brightness Page EN-27*	-5 to +5
			Language ⇨ *3.4.2.6 Language Page EN-28*	Deutsch
				English
				Francais
				Nederlands
				Espanol
				Italiano
				Suomi
				Dansk

Main menu options	Menu options	Menu sub-items	Sub-items	
Settings	Device settings	Display	Unit ⇨ *3.4.2.7 Unit Page EN-28*	Kilometres
				Miles
			Date⇨ *3.4.2.8 Date Page EN-28*	Day: 01 to 31
				Month: January to December
				Year: 2015 to 2114
			Time ⇨ *3.4.2.9 Time Page EN-29*	Hour: 00 to 23
				Minute: 00 to 59
				Second: 00 to 59
		Drive	Wheel circumference ⇨ *3.4.2.10 Wheel circumference Page EN-29*	1,510 mm to 2,330 mm
			Speed ⇨ *3.4.2.19 Speed Page EN-32*	OFF, 6 km/h to 45 km/h
			Light reserve ⇨ *3.4.2.11 Light reserve Page EN-30*	No
				Yes
			Shift sensor ⇨ *3.4.2.12 Shift sensor Page EN-30*	OFF, 50 ms to 300 ms
			Climb assist ⇨ *3.4.2.13 Climb assist Page EN-30*	1 to 7
			Ride profile ⇨ *3.4.2.14 Ride profile Page EN-31* ⇨ *2.7 Changing ride profile Page EN-14*	Relax
				Regular
				Dynamic

Main menu options	Menu options	Menu sub-items	Sub-items	
Settings	Personalise	Name ⇨ *3.4.2.15 Name Page EN-31*		
		SET favourites ⇨ *3.3.6.2 Preselecting SET favourites Page EN-21*	Trip km/time	
			Trip max/Ø	
			Tour km/Ø	
			Cadence	
	Other	Factory settings ⇨ *3.4.2.17 Factory settings Page EN-32*	Reset to factory settings?	No
				Yes
		Software	Version ⇨ *3.4.2.18 Version Page EN-32*	Display of software version (C66.1.043 as of 04/2015)

3.4.2.1 Show ride data

You can display the following menu options in the "Show ride data" main menu option:

Menu sub-items	Meaning
Trip (in km)	Trip (e.g. day trip, short trip) in kilometres.
Trip time (in 00:00:00 format)	Duration of trip (e.g. day trip, short trip) in hours, minutes and seconds.
Trip max (in km/h)	Maximum speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Trip Ø (in km/h)	Average speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Tour (in km)	Tour (e.g. cycle tour over several days) in kilometres.
Tour Ø (in km/h)	Average speed (in kilometres per hour) achieved on the tour (e.g. cycle tour over several days).
Total (in km)	Total number of kilometres ridden.

1. Select the required option using the ⊕/⊖ buttons. A box on the right shows how far you can scroll up and down. The option selected is shown with a black background.
2. Confirm your selection by briefly pressing the SET button.
   You return to the menu sub-items.

3.4.2.2 Deleting trip data

In main menu option "Delete trip data", you can reset to 0 options Trip (in km), Trip time (in 00:00:00), Trip max (in km/h) and Trip Ø (in km/h). Proceed as follows for this:

1. Navigate to "Delete trip data" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.
2. Prompt "Confirm delete?" is shown on the display, with "Yes" and "No" underneath
3. Select the required option using the ⊕/⊖ buttons. The selection has a black background.
4. Confirm your selection by briefly pressing the SET button.
   You return to the menu sub-items.

3.4.2.3 Deleting tour data

In main menu option "Delete tour data", you can reset to 0 options Tour (in km) and Tour Ø (in km). Proceed as follows for this:

1. Navigate to "Delete tour data" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.
2. Prompt "Confirm delete?" is shown on the display, with "Yes" and "No" underneath
3. Select the required option using the ⊕/⊖ buttons. The selection has a black background.
4. Confirm your selection by briefly pressing the SET button.
   You return to the menu sub-items.

3.4.2.4 Contrast

You can change the contrast of the display to improve readability:

1. Navigate to "Contrast" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

Pick from:

-5	-4	-3	-2	-1	Default	+1	+2	+3	+4	+5

2. Use the ⊕/⊖ buttons to select the contrast strength required.
   The strength selected is shown with a black background.
3. Press the SET button to return to the sub-menu

3.4.2.5 Brightness

You can change the brightness of the display to improve readability:

1. Navigate to "Brightness" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

Pick from:

-5	-4	-3	-2	-1	Default	+1	+2	+3	+4	+5

2. Use the ⊕/⊖ buttons to select the brightness required.
   The brightness strength selected is shown with a black background.
3. Press the SET button to return to the sub-menu

3.4.2.6 Language

The language in which text is displayed can be changed in the "Language" sub-item. Select from:

- » Deutsch
- » English
- » Francais
- » Nederlands
- » Espanol
- » Italiano
- » Suomi
- » Dansk

1. Navigate to "Language" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.
2. Use the ⊕/⊖ buttons to select the language required.
   The language selected is shown with a black background.
3. Confirm by briefly pressing (SET). You return to the sub-menu.

3.4.2.7 Unit

1. Navigate to "Unit" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

Pick from:

- » Kilometres
- » Miles

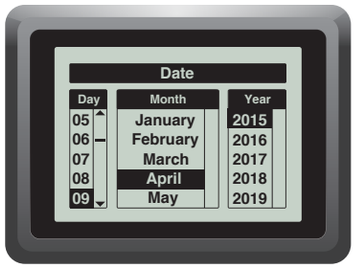
2. Use the ⊕/⊖ buttons to select the unit required.
   It has a black background.
3. Confirm by briefly pressing (SET). You return to the sub-menu.

3.4.2.8 Date

1. Navigate to sub-item "Date"

Select from:

Day	01 to 31
Month	January to December
Year	2015 to 2114



Setting the date

2. Use the ⊕/⊖ buttons to select the option required.
   The selection has a black background.
3. Confirm by briefly pressing (SET). You move to the next option.
4. Once you confirm the year with (SET), you return to the sub-menu

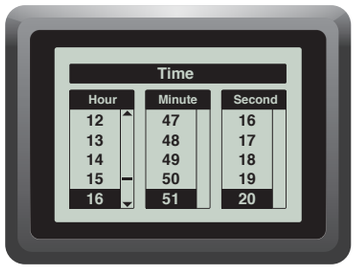
3.4.2.9 Time

The time is shown in the start menu. Proceed as follows to set or change the time:

1. Navigate to "Time" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

Pick from:

Hour	00 to 23
Minute	00 to 59
Second	00 to 59



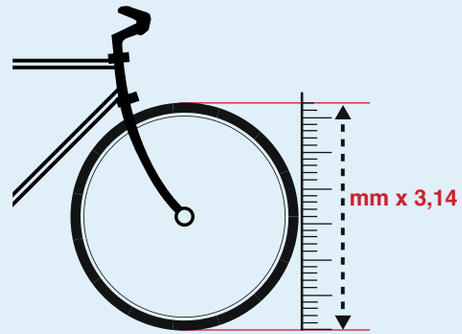
Setting the time

2. Use the ⊕/⊖ buttons to select the option required.
   The selection has a black background.
3. Confirm by briefly pressing (SET). You move to the next option.
4. Once you confirm the seconds with (SET), you return to the sub-menu

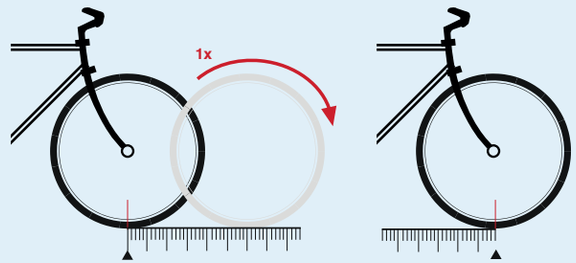
3.4.2.10 Wheel circumference

Ask your cycle dealer for the wheel circumference. You can also measure it yourself:

1. Wheel diameter in mm x 3.14 = Wheel circumference in mm.



2. Push your cycle by one full revolution and measure how far it travels (in mm).



1. Navigate to "Wheel circumference" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

You can pick values between:

» 1,510 mm and 2,330 mm

2. Use the ⊕/⊖ buttons to select the option required. The option selected is shown with a black background.
3. Once you confirm the wheel circumference with (SET), you return to the sub-menu

3.4.2.11 Light reserve

When enabled, the Light reserve function keeps back part of the battery power for long-term light function. This power is kept for two hours after the assist power has ended.

1. Navigate to "Light reserve" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.
2. Use the ⊕/⊖ buttons to select "Yes" or "No". The option selected is shown with a black background.
3. Once you confirm with (SET), you return to the sub-menu

3.4.2.12 Shift sensor

The shift sensor detects changes of gear and interrupts motor assist for fractions of a second. This enables switching to be smoother and much quicker, especially for gear hubs. The higher this value is set, the longer the time without assist - and more time is provided for shifting gear.

1. Navigate to "Shift sensor" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

Pick from:

OFF	50 ms	100 ms	150 ms	200 ms	250 ms	300 ms

2. Use the ⊕/⊖ buttons to select the option required. The option selected is shown with a black background.
3. Once you confirm with (SET), you return to the sub-menu

3.4.2.13 Climb assist

When the cycle is being ridden, the power sensor integrated in the motor registers the pedal power you require. The motor controller interprets the pedal power signals and responds (differently depending on the climb assist value setting). The lower the value set (e.g. 1), the more sluggish the response of the motor during the assist phase. The higher the value set (e.g. 7), the more sensitive the motor responds to the pedal power. For uphill rides in particular, it is beneficial when the power sensor does not respond so sensitively, so that it is possible to ride with motor assist which is as uniform and harmonic as possible.

1. Navigate to "Climb assist" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

Select from:

1	2	3	4	5	6	7

2. Use the ⊕/⊖ buttons to select the option required.
   The option selected is shown with a black background.
3. Once you confirm with SET, you return to the sub-menu

3.4.2.14 Ride profile

In the ride profile, it is possible to specify the maximum assist level to be achieved by the motor.

Select the ride profile in line with the routes you ride. For a leisurely tour with friends at the weekend, the "Relax" assist level is the right choice. If you often speed from one appointment to the next, the "Dynamic" setting can inject the necessary pace.

The most recent setting remains saved.

1. Navigate to "Biking profile" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

You can select from the following:

Ride profile	Properties			
	Power on start-up	Power delivery	Maximum power	Power consumption
Relax	Low	Low	Low	Low
Regular	Medium	Medium	Medium	Medium
Dynamic	High	High	High	High

2. Use the ⊕/⊖ buttons to select the option required. The option selected is shown with a black background.
3. Once you confirm with SET, you return to the sub-menu

3.4.2.15 Name

In "Name", you can set the text for the welcome screen.

1. Navigate to "Name" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.

2. Use the ⊕/⊖ buttons to select the letters required. Letters selected have a black background.

Setting the name

3. Confirm with the SET button
4. Once you have made your selection, press "OK" to return to the sub-menu or <- for the start menu

3.4.2.16 SET favourites

⇨ *3.3.6.2 Preselecting SET favourites Page EN-21*

3.4.2.17 Factory settings

1. Navigate to "Factory settings" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*.
2. Prompt "Reset to factory settings?" is shown on the display, with "Yes" and "No" underneath
3. Select the required option using the ⊕/⊖ buttons. The selection has a black background.
4. Confirm your selection by briefly pressing the SET button. You return to the sub-menu.

3.4.2.18 Version

Proceed as follows if you want to display the name of the software version currently on your display:

1. Navigate to "Version" as described in ⇨ *3.4.1 Configuring settings in the menu Page EN-22*. This shows the current display software.
2. Press the SET button to return to the sub-menu

Ask as part of maintenance work in the service book whether there is new software for your S-Pedelec.

3.4.2.19 Speed

In the „Speed“ sub-item, you can set the speed up to which the drive provides assistance.

1. Navigate to „Speed“ as described on Page 22 in Section 3.4.1 Configuring settings in the menu. You can select a value in range 6 km/h to 45 km/h. Selecting „OFF“ means the drive unit provides assistance up to 45 km/h.
2. Use the / buttons to select the value required. The value selected has a black background.
3. Confirming the wheel circumference returns you to the sub-menu.

4. App: Impulse E-Bike navigation

Technical details

Operating system	iOS	≥ 7	Download -> App store **https://itunes.apple.com/app/id988052596**
	Android	≥ 4.3.3	Download -> Google Play **https://play.google.com/store/apps/details?id=eu.beemo.impulse**

Menu structure

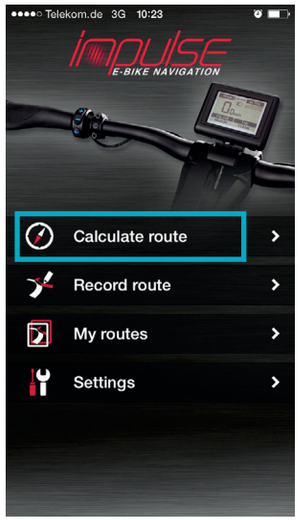
Calculate route	Start-destination	Start / destination	Current location	
			Find location	
			Contact location	
			Location from map ⇨ *4.1 Location from map Page EN-35*	
			Place of interest	Accommodation
				Place to eat/drink
				Cycle service
			Place used recently	

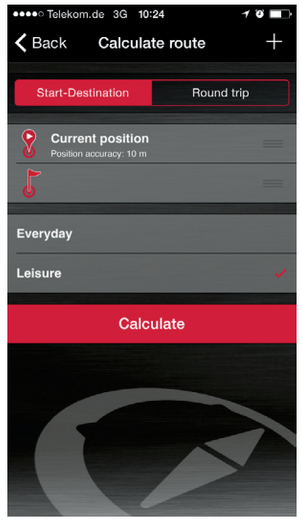
Record route	Round trip	Start 	Current location	
			Find location	
			Contact location	
			Location from map ⇨ *4.1 Location from map Page EN-35*	
			Place of interest	Accommodation
				Place to eat/drink
				Cycle service
			Place used recently	
	Every day ⇨ *4.2 Every day Page EN-36*			
	Leisure time ⇨ *4.3 Leisure time Page EN-36*			
My routes	Routes recorded			
	Routes remembered			
Settings	Navigation instructions	Activate voice instructions	Volume	
	My E-Bike and me	Vehicle class	Pedelec	
			S-Pedelec	
		Vehicle type	City trekking cycle	
			Mountain bike	
		Weight (including trailer) in kg		
		Me	Body weight	
			Average speed in km/h (manual)	
			Use display speed of my vehicle.	

4.1 Location from map

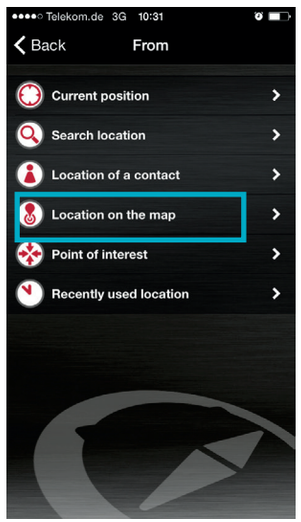
Proceed as follows to select a location from a map:

1. Select "Calculate route". You access the menu.

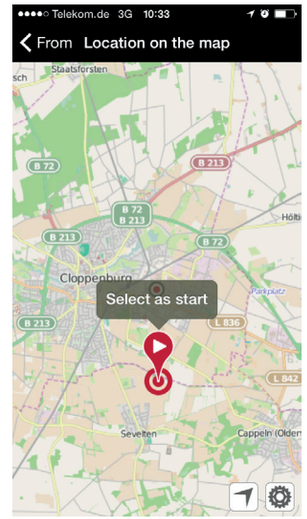




2. Select "Location from map"



3. Use your finger to tap the place required. Keep it there for 2 seconds. The place is selected.



4.2 Every day

Appropriate route planning to reach your every day destinations speedily. It prefers these options whenever possible:

» Secondary routes

» Cycle lanes and paths

» Short and direct routes

» Easily accessible, paved surfaces

4.3 Leisure time

Appropriate route planning - especially for leisure time and tourist activities. It prefers these options whenever possible:

» Sign-posted, official themed routes and long-distance cycle paths

» Easily accessible, paved surfaces

» Secondary routes

» Beautiful surroundings as regards countryside

4.4 Impulse Evo Smart display: Show route

You can show on your Impulse Evo Smart display the route to a desired location.

Prerequisites

You require a smartphone with the following:

Wireless technology	BTLE (Bluetooth Low Energy) 4.0, BTLE 4.1	
Operating system	iOS	≥ 7
	Android	≥ 4.3.3
App installed	Impulse E-Bike navigation ⇨ *4. App: Impulse E-Bike navigation Page EN-33*	

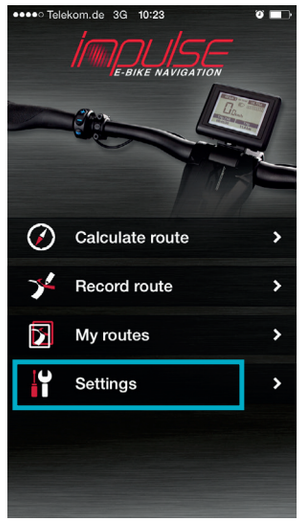
Procedure

WARNING

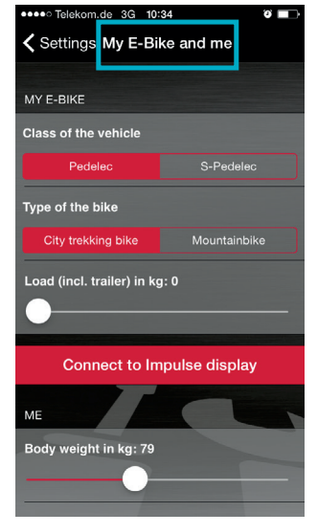
Safely secure the smartphone and its charger cable whilst the cycle is moving. They may otherwise get caught up in rotating parts, causing a serious fall. Ask your cycle dealer for a suitable smartphone holder.

1. Switch on the S-Pedelec ⇨ *3.3.1 Switching on the S-Pedelec Page EN-19*.
2. Open the "Impulse E-Bike Navigation" App

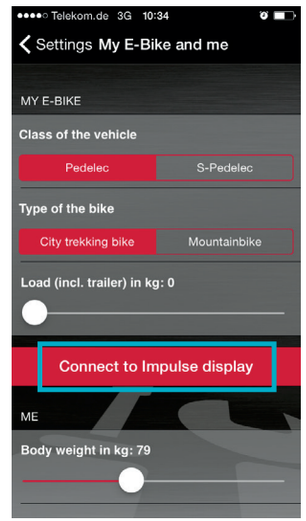
3. Go to "Settings"

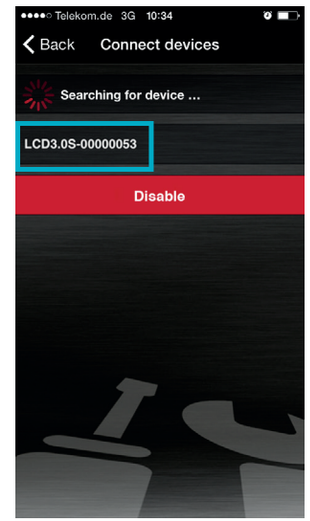


4. Select "My E-Bike and me"

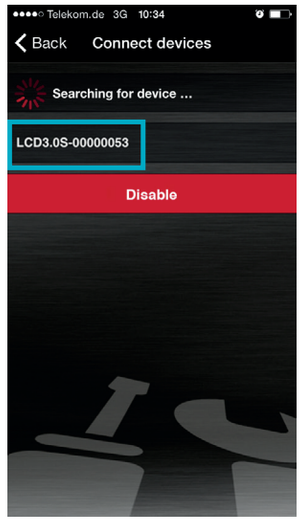


5. Select "Connect to Impulse display". The App starts to look for the S-Pedelec. After a short time, all Bluetooth-capable S-Pedelecs are displayed in the form of a number combination.

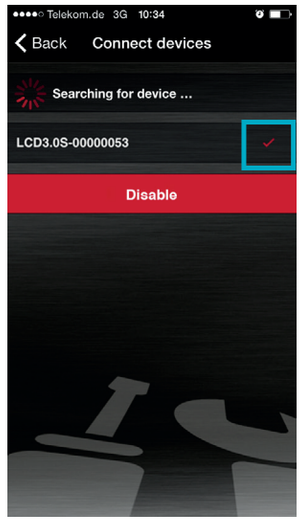




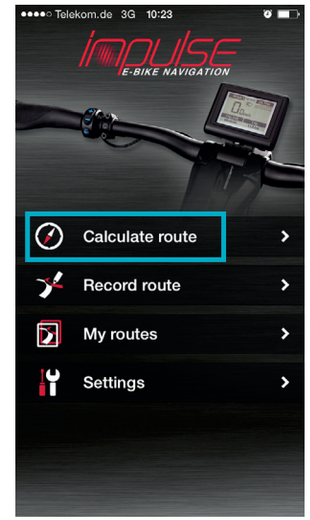
6. Select the S-Pedelec you want to connect to your smartphone. The number of your S-Pedelec is on the back of the display. This is an 8-digit serial number. Use the last digits of the number.



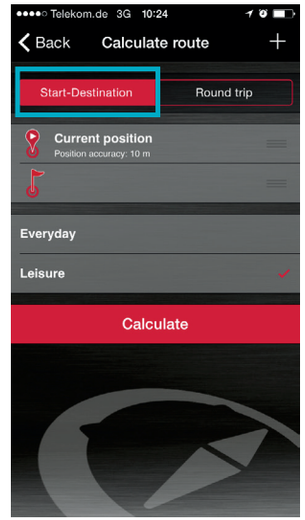
7. Once you have selected the required S-Pedelec in the App, the selection is ticked red. The smartphone is connected to the S-Pedelec.

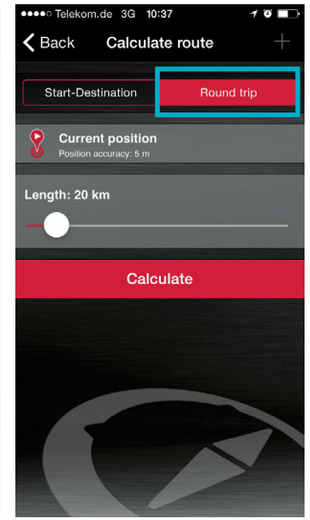


8. Now go to "Calculate route"

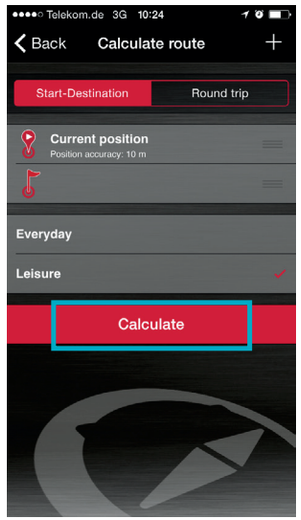


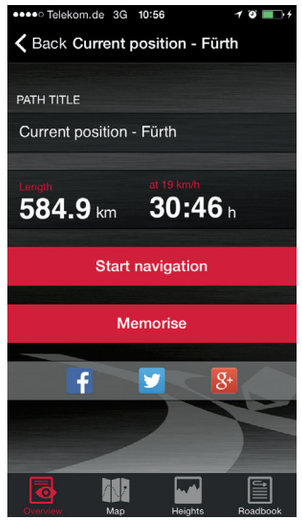
9. Enter the start and destination, or the round trip.



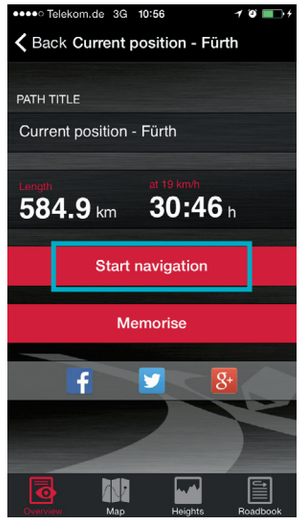


10. Select "Calculate". The title, length (in km) and journey time (in h) of the route are displayed.

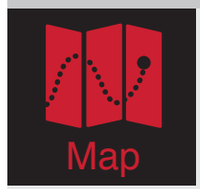
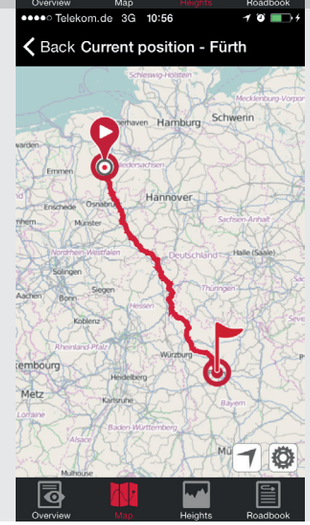


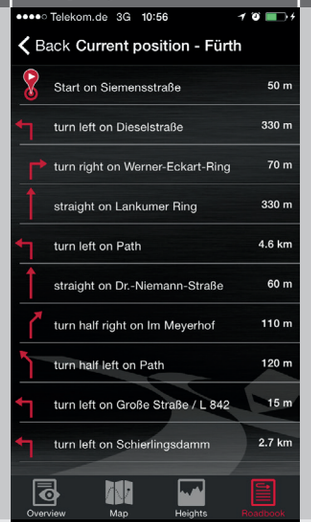
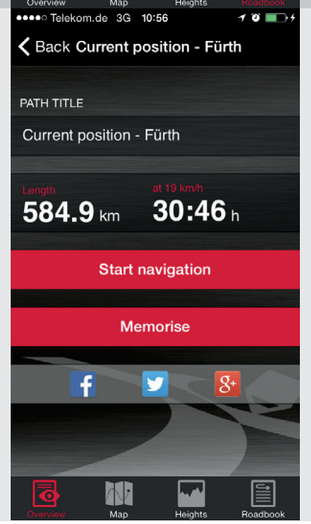


11. Select "Start navigation". Navigation is shown in partial steps on the Impulse Evo Smart display.



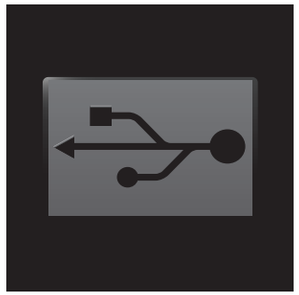
12. Select how you want the route displayed on the smartphone:

Symbol	Display	Meaning
		**As elevations:** A chart provides information on elevation changes over the entire route. Also displayed are the highest and lowest points on the route, and the steepest uphill and downhill inclines.
		**As a map**

Symbol	Display	Meaning
		**As a roadbook:** List of places on the route. The list is read from the top down.
		**As an overview:** Display of route title, length (in km) and journey time (in h).

4.5 Impulse Evo Smart display: Charging the smartphone

You can use the USB charge socket on the display to charge your smartphone battery.



USB power jack

WARNING

Safely secure the smartphone and its charger cable whilst the cycle is moving. They may otherwise get caught up in rotating parts, causing a serious fall. Ask your cycle dealer for a suitable smartphone holder.

Requirements:

Cable type	USB OTG (on the go) micro cable

1. Use the correct cable to connect the smartphone to the display

4.5.1 Tips

4.5.1.1 Transportation and shipping

WARNING

Always remove the battery before transporting the S-Pedelec. Unintentionally pressing the ⏻ button represents a risk of injury. This also protects the battery from the weather.

» **By car: The bike carrier must be designed for the greater weight of the S-Pedelec.** Always use appropriate rain protection to transport S-Pedelecs on vehicle cycle racks. Rain can otherwise damage the motor and its components. Suitable covers are available from your dealer and online.

» **By train: Only transport your S-Pedelec in trains having the bicycle symbol.** Reservations are required for InterCity and EuroCity trains. No bicycles may be taken in InterCity Express trains.

» **By plane: Find out in good time whether the cycle regulations for your airline permit transportation of S-Pedelecs. Batteries may not be taken on passenger planes, neither in the hold nor cabin.** They are subjected to hazard goods legislation.

Do not send any batteries. Batteries are hazardous goods which can overheat and catch fire in certain conditions. Only trained personnel may prepare and transport batteries. If you have a complaint about a battery or batteries, please always go through your cycle dealer. They are able to have batteries picked up at no charge under the hazard goods legislation.

Batteries are subjected to the requirements in hazardous goods legislation. They may be transported by road by private users without any further stipulations. When transported by commercial third parties (such as by air, freight forwarders and logistics firms), special requirements of packaging and labelling must be observed. Please contact your cycle dealer if you have any questions about transportation.

4.5.1.2 Riding with a trailer and/or luggage

It is not permitted to carry children in a bike trailer pulled by an S-Pedelec. Trailers themselves are permitted, provided the trailer coupling used has the national type approval (ABE) required for motor vehicles. Please note the following:

» The total weight for the bicycle may not be exceeded.

Total weight = weight of cycle + weight of rider + weight of trailer + weight of luggage

Vehicle type	Overall weight permitted
S-Pedelec Impulse Evo	120 kilograms
S-Pedelec Impulse Evo semi XXL	150 kilograms
S-Pedelec Impulse Evo XXL	170 kilograms

Trailers

A trailer changers the ride characteristics. The braking distance becomes longer, so brake earlier. Also, steering becomes sluggish - so adapt how you ride to the changed ride characteristics.

Practise starting off, braking, and riding round corners and on inclines with a trailer - initially with an unloaded one.

Only use a trailer which satisfies relevant national laws. Non-approved trailers can cause accidents. Contact your cycle dealer for recommendations regarding suitable trailers.

WARNING

Do not attach a luggage rack to the seat post. It is not designed for this purpose. Overloading of the seat post by a luggage rack can cause component breakages and serious falls.

When transporting storage bags or other loads on luggage racks, ensure they are fastened securely. If they are not, straps, etc. can get caught up in the spokes and/or rotating wheels. Serious falls can result.

PLEASE NOTE

Only transport luggage on the luggage racks provided.

Weight changes riding characteristics. The braking distance becomes longer, so brake earlier. Also, steering becomes sluggish - so adapt how you ride to the changed ride characteristics.

» The maximum weight for the luggage rack may not be exceeded.

Luggage rack position	Overall weight permitted
Front: Load area above the front wheel	10 kilograms
Front: Low loading area	18 kilograms
Rear	25 kilograms

PLEASE NOTE

Look out for different specifications on the luggage rack itself and in the instructions provided by the luggage rack manufacturer. Breakages to the luggage rack may result otherwise.

» **Transport your luggage in luggage bags on the sides.** Spread the luggage to guarantee the weight is distributed evenly. This gives you safe riding characteristics.

4.5.1.3 Storage

1. Remove the battery from the S-Pedelec
2. Store the battery in a dry, not excessively warm room. The battery should not be exposed to direct sunshine. The recommended storage temperature range is 18 to 23°C.

4.5.1.4 Cleaning

WARNING

Remove the battery before cleaning the S-Pedelec.
Unintentionally pressing the ⏻ button and touching live parts represent a risk of injury.

PLEASE NOTE

Do not spray the S-Pedelec with a water hose or wash it down with a high-pressure cleaner. Although the components are sealed off, damage to the cycle may still result. Clean the cycle with a slightly damp cloth.

Do not immerse the drive unit or components into water. Although the components are sealed off, damage may still result.

Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either. They leave scratches and cause the surface to become matt. To clean your cycle, it is best to use a soft cloth moistened with water or mild cleaning agent.

Do not allow dirt to dry out. It is best to clean the cycle immediately after your ride.

Drive unit

CAUTION

Do not clean the drive unit when it is warm (such as immediately after a ride). Wait until it has cooled down. You may burn yourself otherwise.

1. Remove the battery from the S-Pedelec
2. Clean the drive unit from outside using a slightly moist, soft cloth

Display and easy-reach control

1. Clean the display and easy-reach control from outside using a slightly moist, soft cloth

4.5.1.5 Disposal

Do not throw the drive system, display or easy-access control out with the household waste. Take these components to the appropriate places (such as recycling stations).

5. Battery

5.1 Safety information

WARNING

All those (including children) who are unable to use the battery due to their physical, sensory or mental aptitude, or their lack of experience or knowledge, may not use it without being under the supervision or instruction of a person responsible. A risk of misuse and injury may otherwise result.

Always remove the battery before working on the S-Pedelec. The cycle could switch on without warning and pose a risk of serious injury.

Only use your S-Pedelec with the correct, original battery. Using other batteries can result in explosions, serious burns and fire. Malfunction and limited service life can also entail. A list of permitted batteries is in ⇨ *5.2 Technical details Page EN-46*.

Only charge your battery with the correct, original charger. Using other chargers can result in explosions, serious burns and fire. Malfunction and limited service life can also entail. A list of permitted chargers is in ⇨ *6.3 Overview and functions Page EN-55*.

Batteries may not be exposed to fire, sparks or heat (such as from radiators and continual sunshine).

WARNING

They can explode, causing serious burns and fire. High temperatures can also shorten the service live of your battery. Always ensure there is sufficient ventilation when charging the battery.

Batteries may not be submersed in water. This presents a risk of explosion. Do not extinguish a burning battery with water - only its immediate surroundings. Fire extinguishers with metal fire powder (Class D) are more suitable. If the battery can be taken outside safely, smother the fire with sand.

Batteries may not be short-circuited. A short-circuit between the contacts can cause burns and fire. Keep the battery away from nuts, bolts, paper clips, keys, coins, nails and other small metal objects which can cause bridging of the contacts.

Batteries may not be destroyed, shredded, taken apart, opened or repaired. They can explode, causing serious burns and fire. Contact your cycle dealer for help if you have problems with the battery.

Damaged batteries may not be charged, used or transported.

» They can explode, causing serious burns and fire.

» Vapour can escape and irritate the air ways. Ensure there is a supply of fresh air and consult a doctor in the event of discomfort.

WARNING

» Liquid can escape and cause skin irritation. Prevent contact with it. In the event of accidental contact, wash off the liquid with water. If liquid enters the eyes, also seek medical assistance.

A battery can still be damaged after a drop or impact even if no external damage is evident. Battery which looks fine on the outside should therefore also be subjected to an inspection. Contact your cycle dealer.

PLEASE NOTE

Batteries may not be subjected to any mechanical impacts. This poses a risk of damage.

Perform a learn cycle. You should drain a new, **fully charged** battery once until the assist function stops, and without recharging it in-between. By doing so, the battery "learns" its capacity, and the actual capacity matches the charge level display. Please perform a learn cycle every six months or 5,000 kilometres. When the battery becomes older and you do not repeat the cycle from time to time, the difference between actual battery capacity and charge level display will become greater and greater.

5.2 Technical details

* * 3 LEDs up to wear limit in consideration of battery age

** 4 A charger up to 95% FCC

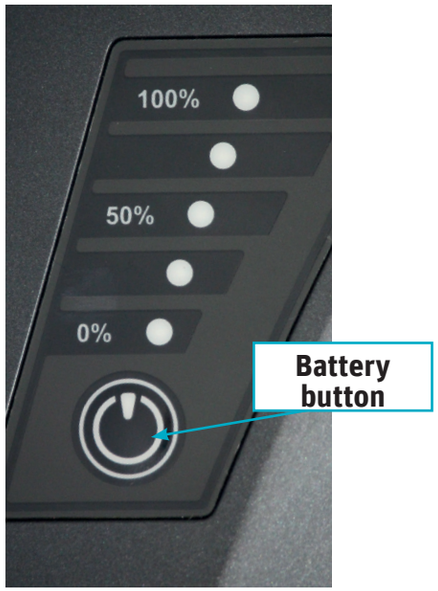
*** For the lowest assist level under optimal conditions and with a fully charged battery of the highest capacity

Type	15 Ah	17 Ah
Position	Seat tube	Seat tube
Nominal capacity	14.25 Ah	16.75 Ah
Nominal voltage	36 V	36 V
Power	520 Wh	630 Wh
Weight	3120 g	3185 g
Charge cycles*	1,100 full cycles	1,100 full cycles
Charge time**	Approx. 3.5 hours	Approx. 4 hours
Cell	Li-ion	Li-ion
Range***	180 km	205 km
Permitted ambient temperature range during charging	0 - 40 °C	0 - 40 °C
Storage temperature	-10 to +50 °C	-10 to +50 °C
Recommended storage temperature	+18 to +23 °C	+18 to +23 °C

5.3 Overview and basic functions

5.2.1 Battery management system (BMS)

On the outside of the battery are a button and a display panel with five LEDs. Three LEDs show percentage values. The LEDs light up when you press the battery button. The number lighting up, and how, provides information on the battery.



5.2.1.1 Checking the charge level

1. Press the battery button for 1 second. The LEDs light up.

Display		Description	Charge level
100%	●●●●●	5 LEDs ON	100 – 84%
	●●●●	4 LEDs ON	83 – 68%
50%	●●●	3 LEDs ON	67 – 51%
	●●	2 LEDs ON	50 – 34%
0%	●	1 LED ON	33 – 17%
0%	◎	1 LED flashing	17 – 0%

5.2.1.2 Checking the capacity

1. Press the battery button for 3 seconds. The battery capacity is displayed.

Display		Description	Charge level
(100%)	●●●●●	At least 4 LEDs ON	The battery has a capacity of over 68%

The battery may have to be replaced when the capacity is below 68%. Discuss how to proceed with your cycle dealer.

5.2.1.3 Sleep mode

To prevent total discharge, the battery management system switches the battery to Sleep mode. Your battery transitions to Sleep mode after 2 days regardless of the charge level.

Proceed as follows to find out whether the battery is in Sleep mode:

1. Press the battery button for 1 second. The following is displayed:

Display	Description
○ ○	The first and fifth LEDs flash twice

Waking from Sleep mode

1. Connect the battery to the charger.
2. Briefly press the battery button. The battery is now "woken up".

Manually transitioning to Sleep mode

1. Press the battery button for 1 second (do this twice). The following is displayed:

Display	Description
● ●	The first and fifth LEDs are ON

5.3 Fitting

PLEASE NOTE

Hold the battery tight so it does not fall.

5.3.1 Inserting and locking into place a battery

One-key system: The same key can be used for cycle and battery lock.

1. Hold the battery at angle of 80°, slightly tilted to the left in front of the docking station.

2. Place the battery catches into the dents provided.

3. Push the battery forwards and upwards into the docking station until the locking mechanism engages.

4. Remove the battery key from the lock. Now the battery is locked.

The recommendation is to remove the key now and keep it in a safe place so it does not break off and is not lost.

5.3.2 Unlocking and removing the battery

1. Hold the battery, put the key into the battery lock and turn it clockwise. Hold the key. The battery is unlocked.

2. Grip the battery and tilt it out of the docking station on the side.

PLEASE NOTE

Hold the battery tight so it does not fall. It might be damaged otherwise.

5.4 Tips

5.4.1 Range

How far you can ride with your battery depends on several factors.

Ride profile: You need the most power in the highest ride profile (Dynamic). The range becomes shorter.

Select the ride profile in line with the routes you ride. For a leisurely tour with friends at the weekend, the "Relax" assist level is the right choice. If you often speed from one appointment to the next, the "Dynamic" setting can inject the necessary pace.

Assist mode: You need the most power in the highest assist mode (ULTRA). The range drops drastically the higher the assist level selected is.

Vary the assist modes. With the wind behind you or on level ground for example, you can also speed along with a lower assist mode. It makes sense to switch off assist completely when riding downhill.

Tyre pressures: The front tyre is difficult to turn when its pressure is too low. The drive unit needs to provide more assistance and the range decreases.

Get your cycle dealer to show you which air pressure is best for your tyres, and how you can check the pressure. Caution - excessively high tyre pressures can also be dangerous.

Riding style: A low pedalling speed combined with high gears results in high power consumption.

For a constant pedalling speed, change to a low gear in good time - especially when starting off.

Physical condition: The better your physical condition, the lower the level of assistance needed.

Overall weight: The lower the overall weight on the cycle, the "easier" it is to ride it.

A recommendation when planning longer journeys is to take a replacement battery and/or a charger.

Outside temperatures: The lower the outside temperatures (e.g. cold in winter), the shorter the range.

Insert the battery just before starting off with your S-Pedelec. This way you prevent low temperatures shortening the range.

Battery capacity: A much shorter service life after the charging process indicates that the battery has lost considerable capacity. ⇨ *5.2.1.2 Checking the capacity Page EN-47*.

The battery may have to be replaced. Discuss how to proceed with your cycle dealer.

Route selected: You need to pedal harder when cycling uphill or against strong head wind. This is registered by the power sensor, which in turn requires the motor to work harder.

Charging a smartphone: Connecting a smartphone to your Impulse Evo Smart display to charge it also requires power.

5.4.2 Transportation and shipping

WARNING

Always remove the battery before transporting the S-Pedelec. Unintentionally pressing the ⏻ button represents a risk of injury. This also protects the battery from the weather.

» **By car: The bike carrier must be designed for the greater weight of the S-Pedelec**

WARNING

» **By train: Only transport your S-Pedelec in trains having the bicycle symbol.** Reservations are required for InterCity and EuroCity trains. No bicycles may be taken in InterCity Express trains.

» **By plane: Find out in good time whether the cycle regulations for your airline permit transportation of S-Pedelecs. Batteries may not be taken on passenger planes, neither in the hold nor cabin.** They are subjected to hazard goods legislation.

Do not send any batteries. Batteries are hazardous goods which can overheat and catch fire in certain conditions. Only trained personnel may prepare and transport batteries. If you have a complaint about a battery or batteries, please always go through your cycle dealer. They are able to have batteries picked up at no charge under the hazard goods legislation.

Batteries may not be short-circuited. A short-circuit between the contacts can cause burns and fire. Keep the battery away from nuts, bolts, paper clips, keys, coins, nails and other small metal objects which can cause bridging of the contacts.

Batteries are subjected to the requirements in hazardous goods legislation. They may be transported by road by private users without any further stipulations. When transported by commercial third parties (such as by air, freight forwarders and logistics firms), special requirements of packaging and labelling must be observed. Please contact your cycle dealer if you have any questions about transportation.

5.4.3 Storage

1. Remove the battery from the S-Pedelec
2. Store the battery in a dry, not excessively warm room. The battery should not be exposed to direct sunshine. The recommended storage temperature range is 18 to 23°C.

A battery should not be stored when fully charged. A charge level between 50 and 70% is ideal.

Because a battery loses energy very slowly, it should be recharged every two to three months (six months at the latest).

5.4.4 Cleaning

WARNING

Remove the battery from the S-Pedelec before cleaning the cycle. Unintentionally pressing the ⏻ button and touching live parts represent a risk of injury.

CAUTION

When cleaning the cycle, ensure no water enters the battery. If it does, electric shock may result.

When wiping down the battery, prevent touching the contacts as this presents a risk of electric shock.

PLEASE NOTE

Do not spray the battery with a water hose or wash it with a high-pressure cleaner. Although the components are sealed off, damage to the battery may still result. Clean the battery with a slightly damp cloth.

Do not submerse the battery in water. Although the components are sealed off, damage may still result.

Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either.

PLEASE NOTE

They leave scratches and cause the surface to become matt. To clean your cycle, it is best to use a soft cloth moistened with water or mild cleaning agent.

Do not allow dirt to dry out. It is best to clean the battery immediately after your ride.

1. Remove the battery from the S-Pedelec
2. Clean the casing with a slightly damp, soft cloth.
3. If the battery terminals are dirty, clean them with a dry, soft cloth.

5.4.5 Disposal

Do not throw S-Pedelec batteries out with household waste. Take them to the appropriate places (such as recycling stations).

6. Chargers

6.1 Safety information

WARNING

All those (including children) who are unable to use the charger due to their physical, sensory or mental aptitude, or their lack of experience or knowledge, may not use it without being under the supervision or instruction of a person responsible. A risk of misuse and injury may otherwise result.

Only use the correct, original charger to charge the battery. Using other chargers can result in explosions, serious burns and fire. Malfunction and limited service life can also entail. A list of permitted chargers is in ⇨ *6.3 Overview and functions Page EN-55*.

The mains voltage must match the voltage specified on the charger nameplate. The supply voltage for the charger is specified on the label on the back of the device.

Only charge the correct, original battery with the charger. Using other batteries can result in explosions, serious burns and fire. Malfunction and limited service life can also entail. A list of permitted batteries is in ⇨ *5.2 Technical details Page EN-46*.

Prior to using them, always inspect the charger, cable and connector. Do not use the charger if you ascertain any damage.

WARNING

Do not open the charger yourself, and only have it repaired by qualified experts using original spare parts. A damaged charger, cable or connector increases the risk of electric shock.

The charger is only intended to be used indoors. Keep the charger away from rain and moisture. Penetration of water into the charger represents a risk of electric shock. If it happens, immediately unplug the mains connector from the socket and have the charger checked by a dealer. Condensation may form on the charger when the temperature suddenly changes from cold to warm. When this happens, wait about an hour. This is the time a charger needs to reach the temperature of the warm surroundings. Prevent this happening by storing the charger where it is used.

Do not use the charger and battery on materials which can catch fire easily (such as paper and textiles) or within a combustible environment. This also applies when the battery is charged when fitted to the S-Pedelec. In this case, the S-Pedelec must be positioned such that a potential fire cannot spread quickly (exercise caution with carpeted floors). The charger heat generated during the charge process represents a risk of fire. When there is smoke or an unusual smell, immediately unplug the mains connector of the charger from the socket and disconnect the battery from the charger. An overheated battery is damaged and may not be used again. Always stay with the charger when it is in use.

Always place the charger and battery on a flat surface for the charging process. The charger and battery may not be covered during the charging process.

WARNING

Do not replace the mains cable. This poses a risk of fire and explosion.

Keep the charger clean. Dirt represents a risk of electric shock.

PLEASE NOTE

Do not charge batteries over longer periods if they are already fully charged.

When they are not going to be used for long periods, unplug the mains connector from the socket and disconnect the charger cable from the battery.

6.2 Technical details

Charger 1

Battery voltage	36 V
AC input voltage	230 – 240 V
Frequency	50 - 60 Hz
Max. DC output voltage	42 V
Max. charge current	4 A
Power	185 W
Dimensions (L | W | H)	175 mm | 82 mm | 47 mm
Permitted ambient temperature range during charging	0 °C to +40 °C

Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23°C
Weight	720 g
Protection class	Only in dry conditions

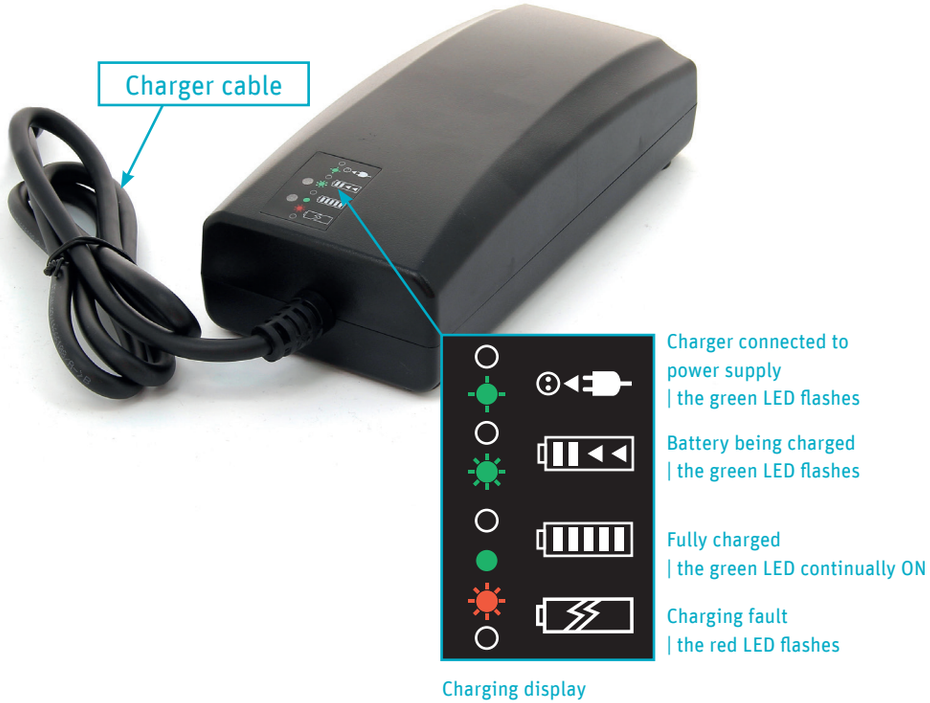
Charger 2

Battery voltage	36 V
AC input voltage	230 – 240 V
Frequency	50 - 60 Hz
Max. DC output voltage	42 V
Max. charge current	4 A
Power	185 W
Dimensions (L | W | H)	206 mm | 94 mm | 61 mm
Permitted ambient temperature range during charging	0 °C to +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Weight	753 g
Protection class	Only in dry conditions

6.3 Overview and functions

Charger 1

Charger 2

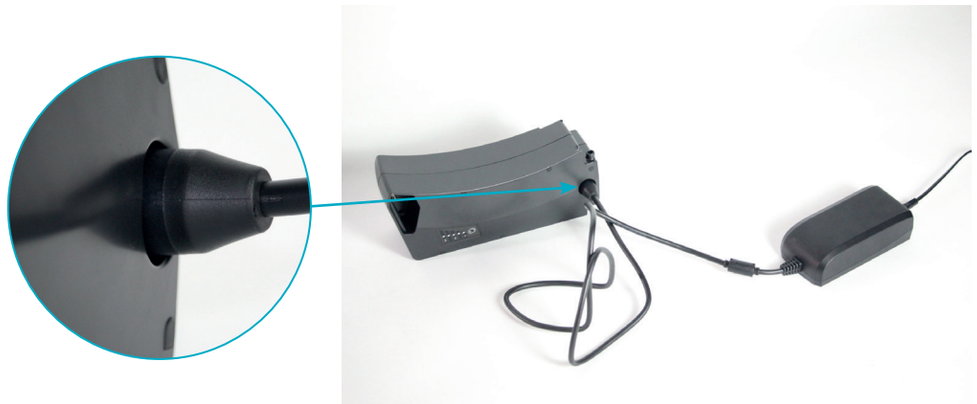


6.3.1 Charging a battery

A battery can stay fitted to the S-Pedelec for the charging process. It can also be removed and charged elsewhere.

Charger 1:

1. Plug the mains connector into a socket
2. Remove the protective cap on the battery
3. Connect the charger cable to the battery (it clicks into place)



4. When the charge process has finished, unplug the charger cable from the power jack of the battery
5. Unplug the connector from the socket

Charger 2:

1. Plug the mains connector into a socket. The green LED flashes. 
2. Remove the protective cap on the battery
3. Connect the charger cable to the battery. The LED flashes at a constant rate  and indicates that the charge process has started.
4. The charger switches off once the battery is fully charged. The green LED lights continually ●.
5. When the charge process has finished, unplug the charger cable from the power jack of the battery
6. Unplug the connector from the socket

6.3.1.1 Battery display during the charge process

Display	Description	Charge level
●●●●●	5 LEDs are ON and no LED flashes	100 - 97%
●●●●○	4 LEDs are ON and the 5th LED flashes	80 – 96%
●●●○	3 LEDs are ON and the 4th LED flashes	60 – 79%
●●○	2 LEDs are ON and the 3rd LED flashes	40 – 59%
●○	1 LED is ON and the 2nd LED flashes	20 – 39%
○	1 LED flashes	0 – 19%

6.4 Tips

6.4.1 Cleaning

CAUTION

When cleaning, ensure no water enters the charger. If it does, electric shock may result.

Before cleaning the charger (especially when wiping it down), always unplug the mains connector and generally avoid touching the contacts, as this presents a risk of electric shock.

PLEASE NOTE

Do not submerse the charger in water. Although the components are sealed off, damage may still result.

Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either. They leave scratches and cause the surface to become matt. To clean your charger, it is best to use a soft cloth moistened with water or mild cleaning agent.

1. Unplug the mains connector from the socket
2. Unplug the charger connector from the power jack
3. Clean the casing with a slightly damp, soft cloth
4. If the terminals are dirty, clean them with a dry, soft cloth

6.4.2 Storage

1. Store the charger in a dry, not excessively warm room. The charger should not be exposed to direct sunshine. The recommended storage temperature range is 18 to 23°C.

6.4.3 Disposal

Do not throw the charger out with household waste. Take it to the appropriate places (such as recycling stations).

7. Faults

7.1 Drive unit, display and easy-reach control

Description	Cause	Remedy
Display does not light up and has no function	a) Battery in Standby mode	a) Press battery button ⇨ *3.3.1 Switching on the S-Pedelec Page EN-19*.
	b) Battery flat or defective	b) Insert a new or fully charged battery ⇨ *6.3.1 Charging a battery Page EN-56*.
	c) S-Pedelec is OFF. If the drive unit is not required to deliver power for 20 minutes or so (because the S-Pedelec is stationary for example), the Impulse Evo switches off by itself.	c) Switch on the S-Pedelec ⇨ *3.3.1 Switching on the S-Pedelec Page EN-19*.
	d) Battery in Sleep mode	d) Connect the battery to the charger ⇨ *5.2.1.3 Sleep mode Page EN-48*.
No speed display	Spoke magnet has slipped out of position	Check to see whether the spoke magnet has slipped out of position. It should be as close as possible to the sensor on the chain stay (max. 10 mm). 
Speed display incorrect	Incorrect unit set	Check the unit setting (mph or km/h) ⇨ *3.4.2.7 Unit Page EN-28*.
	Wheel circumference set incorrectly	Set the correct wheel circumference ⇨ *3.4.2.10 Wheel circumference Page EN-29*.
Motor assist level too weak	Flat battery	Insert a new or fully charged battery ⇨ *6.3.1 Charging a battery Page EN-56*.
Motor runs idly	Gear changing is not set correctly	Check this setting. Contact your cycle dealer.

Description	Cause
Motor noise	The reasons for motor noise are diverse - mechanical faults are not always to blame. For example, the following factors can negatively influence noise: » Excessively high cadence with low load » Very high power required (when riding uphill for example) » The shape of the cycle frame » Chain drive (as opposed to gear hub)

7.2 Battery

Display	Description	Cause	Remedy
○○○○○	5 LEDs flash quickly	a) Battery is flat and is disabled	a) If the battery is flat, it will work again briefly following a short recovery period, then switch off again. It needs to be charged now. ⇨ *6.3.1 Charging a battery Page EN-56*.
		b) The battery is overloaded	b) If the battery is overloaded, it switches on again after a short recovery and can be used normally
○	The 1st LED flashes quickly	There is a charge fault	Immediately unplug the charger from the socket. If the problem persists, a new charger is required.
	Range seems too short	a) The range depends on: » Ride profile » Assist mode » Tyre pressure » Riding style » Physical condition » Overall weight » Outside temperatures » Battery capacity » The route selected » Smartphone charging via display	a) There are many reasons why the range appears too short. Defective components are not always to blame. ⇨ *5.4.1 Range Page EN-50*.

Display	Description	Cause	Remedy
	Range seems too short	b) No learn cycle performed	**Perform a learn cycle:** You should drain a new, **fully charged** battery once until the assist function stops, and without recharging it in-between. By doing so, the battery "learns" its capacity, and the actual capacity matches the charge level display. Please perform a learn cycle every six months or 5,000 kilometres. If you do not repeat the cycle from time to time, the difference between actual battery capacity and charge level display will become greater and greater.
	Battery key lost	Order another key. We recommend making a note of the key number on the sales receipt/document. This number can be used to order a replacement key . If you no longer have the key number, replacing the lock is the only option. Contact your cycle dealer for this. **1.** Go to website www.trelock.de **2.** Select your language **3.** Select "Services" then "Replacement key" **4.** Follow the instructions	
	During the charge process, the battery heats up	High ambient temperatures	Immediately stop the charge process and allow the battery to cool. Then charge the battery in a cooler environment. If the problem persists, contact your cycle dealer (the battery may have to be replaced).
		Battery is damaged	Damaged batteries may not be charged or used in any way. Contact your cycle dealer. The battery may have to be replaced.
	The battery does not charge	Excessively high or low ambient temperature	You can charge the battery in temperature range 0 °C to 40 °C.
		Battery is damaged	Damaged batteries may not be charged or used in any way. Contact your cycle dealer. The battery may have to be replaced.
	Battery is damaged	Accident or fall with the S-Pedelec, or battery dropped	Damaged batteries may not be charged or used in any way. Contact your cycle dealer. The battery may have to be replaced.

7.3 Chargers

Charger 1

Description	Cause	Remedy
Charger gets hotter than 85 °C.	Ambient temperature too high, direct sunlight	1. Unplug the charger from the mains immediately and let it cool down.
		 **Always stay with the charger and the battery when it is in use.**
		2. Continue the charging process when the charger has cooled down.
		 **Permitted ambient temperature range during charging: 0 bis +40 °C.**
		3. If the problem reoccurs, please ask your dealer; the charger may have to be replaced.
	Damaged charger	Please ask your dealer; the charger may have to be replaced.

Charger 2

Display	Description	Cause	Remedy
	The red LED flashes	There is a charge fault	Immediately unplug the charger from the socket. If the problem persists, a new charger is required.

7.4 Other

Description	
Foot pedal has come away from the drive unit	A hammer may never be used to fit the crank to the shaft. This can damage the pedal force sensor, resulting in malfunction of the electric drive. Have this work carried out by your cycle dealer.

8. Replacing parts on the S-Pedelec

Because your S-Pedelec is a Class L1e moped, registration approval from the TÜV and Federal Office for Motor Vehicles must be sought (as is the case for other motorised vehicles). This approval is in place for the S-Pedelec. During the authorisation process, certain parts for which use on this vehicle is permitted were determined. This means the approval of your S-Pedelec only remains valid when exactly the same parts as the types approved are used. If parts are subsequently modified or replaced, the same specifications as for other motorised vehicles take effect. You may only use replacement parts for which expert reports on approval for your S-Pedelec are in place. Alternatively, you can have individual approvals carried out at the TÜV.

Listed below are the parts of your S-Pedelec you may replace with which specifications.

8.1 Add-on parts which may only be replaced by identical parts or parts with approval

- Frame
- Forks
- Motor unit
- Battery
- Tyres
- Rims
- Brake system
- Front light
- Back light
- License plate holder

8.2 Add-on parts not requiring approval

- Cranks
- Pedals (when type-approved pedal reflectors are used)
- Mudguards (the front edge of the front mudguard must be rounded)
- Pannier rack
- Saddle
- Handle bars
- Gear change components (only when the highest gear ratio is not changed)
- Seat post
- Bell (can be changed for another comparable high-pitch bell)
- Mirrors (can be replaced by other type-approved mirrors)
- Chain
- Headset
- Tubes
- Nubs

Notes